40' Utility Landing Craft
United States Navy – Marine Prepositioning Force (MPF)

LIFTING EYE TEST PROCEDURE

40' Utility Landing Craft

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Introduction

The Utility Landing Craft has been designed with an integral lifting-eye system. This system is comprised of four welded aluminum fittings placed on the outboard side deck at frames 6 and 15. The craft is intended to be lifted only with the single point lifting strap assembly supplied with the vessel, or similar arrangement. The following procedure will test the lifting eye system and the connecting hull structure.

Maximum vessel weight at time of lift shall be limited to 40,000 pounds. All four lifting eyes are designed to have a maximum tension load of 12,000 lbs oriented in the direction of the lifting strap when properly rigged with the supplied lifting strap assembly, or similar arrangement. During this test, each lifting eye will be subjected to 150% of the design load.

The lifting eye system was designed to a minimum safety factor of five times the yield strength of the materials. Maximum loads developed are based on the 40,000 lbs maximum vessel weight and the expected vessel center of gravity.

Two diagonally opposed lifting eyes will be tested at a time using crane scales and a lifting strap assembly similar to the one provided with the vessel.

Basic Data:

Maximum hoisting weight of vessel	40,000 lbs
Design hoisting load on each aft lifting eye	11,188 lbs
Test load on aft lifting eye (design load x 150%)	16,782 lbs
Design hoisting load on each forward lifting eye	11,878 lbs
Test load on forward lifting eye (design load x 150%)	17,817 lbs

Preparation:

- Vessel shall be tested while floating on its own bottom. It is assumed that the vessel will be essentially complete and have approximately 200 gallons of fuel in the tanks. Total weight of the vessel before test preparation must be approximately 27,000 lbs.
- Two "ecology blocks," weighing ~3200 lbs each, shall be placed side by side on deck, centered around frame 8 and the vessel centerline. The addition of the blocks will increase the weight of the vessel to approximately 33,500 pounds
- All shackles used in this test procedure shall be a minimum 1 1/8" nominal (1.25" max cross pin diameter) with minimum SWL of 9.5 tons
- Two crane scales, or tension links, will be required for the testing procedure. Minimum capacity for scales shall be 10 tons, however, higher capacity scales may be used if they are demonstrably accurate within the appropriate range.

Forward Starboard and Aft Port Lifting Eye Test:

_____ 1. Visually inspect forward starboard lifting eye and all surrounding hull structure for manufacturing defects and to establish a baseline observation.
_____ 2. Visually inspect aft port lifting eye and all surrounding hull structure for manufacturing defects and to establish a baseline observation.
_____ 3. Using shackles, attach a scale to the forward starboard lifting eye and then to one of the four straps of the lifting strap assembly.
_____ 4. Using shackles, attach a scale to the aft port lifting eye and then to one of the other straps of the lifting strap assembly.
_____ 5. Using extra shackles, attach the two remaining straps to the two remaining lifting eyes, allowing ~6" greater length than the straps with the scales.
_____ 6. Using a crane, slowly lift the central ring of the lifting strap assembly to remove the slack from the forward starboard and aft port straps. Ensure that there is enough slack remaining in the other two straps to allow the full weight of the vessel to be carried by the two test straps, but will stop the vessel from rotating should it become unbalanced.
_____ 7. Slowly haul up with crane until forward starboard scale reads at least 17,817 lbs, and the aft port scale reads at least 16,782 lbs. Record actual weights at each scale. Hold loading for two minutes. Do not exceed the test weight by more than 5% (~900 lbs).
_____ 8. Slowly release tension on lifting fittings and secure the vessel.
_____ 9. Visually inspect the forward starboard lifting eye and surrounding hull structure. No permanent deformation should be apparent.
_____ 10. Visually inspect the aft port lifting eye and surrounding hull structure. No permanent deformation should be apparent.

Forward Port and Aft Starboard Lifting Eye Test:

_____ 1. Visually inspect forward port lifting eye and all surrounding hull structure for manufacturing defects and to establish a baseline observation.
_____ 2. Visually inspect aft starboard lifting eye and all surrounding hull structure for manufacturing defects and to establish a baseline observation.
_____ 3. Using shackles, attach a scale to the forward port lifting eye and then to one of the four straps of the lifting strap assembly.
_____ 4. Using shackles, attach a scale to the aft starboard lifting eye and then to one of the other straps of the lifting strap assembly.
_____ 5. Using extra shackles, attach the two remaining straps to the two remaining lifting eyes, allowing ~6" greater length than the straps with the scales.
_____ 6. Using a crane, slowly lift the central ring of the lifting strap assembly to remove the slack from the forward starboard and aft port straps. Ensure that there is enough slack remaining in the other two straps to allow the full weight of the vessel to be carried by the two test straps, but will stop the vessel from rotating should it become unbalanced.
_____ 7. Slowly haul up with crane until forward port scale reads at least 17,817 lbs, and the aft starboard scale reads at least 16,782 lbs. Record actual weights at each scale. Hold loading for two minutes. Do not exceed the test weight by more than 5% (~900 lbs).
_____ 8. Slowly release tension on lifting fittings and secure the vessel.
_____ 9. Visually inspect the forward port lifting eye and surrounding hull structure. No permanent deformation should be apparent.
_____ 10. Visually inspect the aft starboard lifting eye and surrounding hull structure. No permanent deformation should be apparent.

Observation Checklist:

Forward Starboard Lifting Eye:

Force Applied	Observation Comment
Baseline, no force.	
Goal: 17,823 lbs	

Aft Port Lifting Eye:

Force Applied	Observation Comment
Baseline, no force.	
Goal: 16,776 lbs	

Forward Port Lifting Eye:

Force Applied	Observation Comment
Baseline, no force.	
Goal: 17,823 lbs	

Aft Starboard Lifting Eye:

Force Applied	Observation Comment
Baseline, no force.	
Goal: 16,776 lbs	

Approval KMI: _____ Date: _____